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(54) **Packet flow monitor and control system**

(57) In a first UPC, a PCR is set as a monitor rate for each connection. If a transfer rate of a cell exceeds the PCR set for the connection, the cell is discarded. In a second UPC, an ACR is set as a monitor rate for each connection. If the transfer rate of the cell exceeds the ACR set for the connection, a lower priority is assigned to that cell. Additionally, with a configuration where one UPC monitors a varying rate, a parameter change process is controlled by obtaining a time between a passage time of a detected B-RM cell and an arrival of a user cell and comparing the obtained time with maximum and minimum delay standard values. A parameter table including some parameters is provided. A header of an arrived cell in a forward direction is extracted, and it is determined whether or not the arrived cell is a violation cell using the leaky bucket algorithm, etc. If the arrived cell is a violation cell, it is discarded. An RM cell in a backward direction is received and extracted, and the

parameter table is updated by calculating the minimum cell interval, etc. based on data included in a payload of the RM cell.

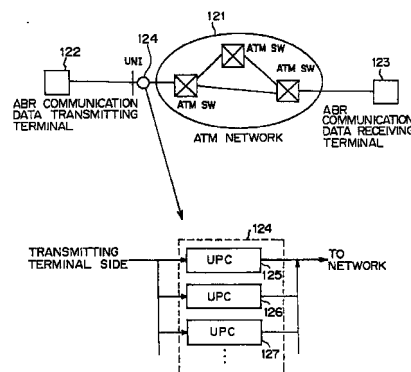


FIG. 11



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EUROPEAN SEARCH REPORT

Application Number
EP 96 11 1029

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Y	* figures 1-3 * * column 2, line 32 - column 8, line 56 * ---	5,7, 9-13,17, 19,21,39	
Y	MANNEM V ET AL: "IMPROVED DUAL LEAKY BUCKET POLICING ALGORITHM FOR ATM NETWORKS" PROCEEDINGS OF SOUTHEASTCON, RALEIGH, MAR. 26 - 29, 1995, 26 March 1995 (1995-03-26), pages 6-11, XP000538630 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS ISBN: 0-7803-2643-1 * figure 1 * * page 9, left-hand column, line 9 - line 39 * ---	5,7,9-12	
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A	* figure 2 * * column 2, line 28 - column 3, line 5 * --- -/--	18,20,22	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 February 2000	Examiner Scalia, A
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



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EUROPEAN SEARCH REPORT

Application Number
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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
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A	BONOMI F ET AL: "THE RATE-BASED FLOW CONTROL FRAMEWORK FOR THE AVAILABLE BIT RATE ATM SERVICE" IEEE NETWORK: THE MAGAZINE OF COMPUTER COMMUNICATIONS,1 March 1995 (1995-03-01), XP000493487 * page 33, left-hand column, line 30 - page 33, left-hand column, line 63 *	32,38, 49-51	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 February 2000	Examiner Scalia, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-12

Packet flow monitor and control system comprising means for assigning a lower priority to a fixed-length packet

2. Claims: 4,17,18,6,19,20,8,13-16,21,22,26,27

Packet flow monitor and control system comprising counter means

3. Claims: 23-25

Packet flow monitor and control system comprising monitor means for retrieving a second monitor rate when the network is in a congested state

4. Claims: 28-31

Packet flow monitor and control system comprising switch means for validating a first or a second usage parameter control means

5. Claims: 32-37,38,49-51

System and device each comprising delay control means

6. Claims: 39-48

Usage parameter control device comprising a parameter table storing a minimum cell interval

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-02-2000

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